House Committee on Agriculture
Subcommittee on General Farm Commodities and Risk Management
Testimony of Don Brown
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Chairman Moran, Ranking Member Etheridge and members of the Committee, thank you for the opportunity to testify today about ways to improve the crop insurance program. The continued availability of affordable insurance protection is vital to the future of agriculture, but as you are keenly aware, the current crop insurance system has pervasive and persistent inefficiencies that negatively impact our farmers and the nation's taxpayers.

Waste, fraud and abuse in the crop insurance program is a serious problem. It has been recognized by the Department of Agriculture for many years. The 1999 GAO Report "*USDA needs a better estimate of improper payments to strengthen controls over claims*" estimated that the US Government was paying out $100 million a year in erroneous claim adjustments. Additionally, the report suggested that it was plausible that fraudulent claims could reach $200 million to $500 million per year.

The Risk Management Agency has taken steps to address waste, fraud and abuse in the crop insurance program, but a system still does not exist that can accurately and effectively verify crop insurance claims.

In recent years, digital camera technology has advanced to the point where multi-spectral digital photography is affordable, transferable and accessible. A multiple camera array mounted on an airplane, can image hundreds of thousands of acres of farmland in a few hours. This imagery and the accompanying data can be used to accurately measure the health of a crop. This technology provides a definitive tool with which insurance adjustors can measure crop loss.

Let me take a step back and review the current procedure for reviewing a claim. I am sure you are aware that if the dollar figure of a claim is below a certain threshold amount, in many instances an adjustor is not even sent to verify the claim. In those cases where an adjustor does visit the site, he or she may drive hundreds of miles to a farm in his or her region. The claims adjustor would literally walk up and down rows of planted crop and sample the field for damage. The adjustor would then estimate the amount of crop loss for the entire field. Visualize an adjustor in the middle of a section - 640 acres of crops – trying to estimate with any accuracy the level of insured loss. It is a daunting challenge. In order to settle the claim he or she must hazard a guess. With nothing other than experience and the naked eye, the producer and the insurer arrive at a number.

Today, our company – in partnership with others - has developed a proven ability to automate this process and give crop insurance adjustors a tool to measure the insurable loss in a timely and fair way. With multi-spectral digital imagery, the claims adjustor does not even have to leave the office. With a little training, an adjustor can look at a data file, calculate the amount of crop loss in minutes and finalize their report. The farmer is provided with a very precise mapping of the field showing the areas of total loss and the areas of marginal or no loss. The guesswork is taken out and the adjustor and the farmer can feel comfortable with the final settlement.

How does this technology work? We deploy a flight crew to fly very precise flight lines at predetermined altitude over the target area. We collect images about every 4-7 seconds with four cameras that are triggered simultaneously. Each camera captures an identical image but through a precision filters - red, green, blue, and false infrared. The first three filters cover the part of the light spectrum visible to the human eye, the last filter that part not visible to humans.

By manipulating the four bands it is possible to measure, very accurately, the relative health of the vegetation. This measurement is a function of the reflectance and absorption of the sun off the surface of the leaf. This technique is well proven and has been cited by the Department of Agriculture as an effective tool to prevent fraud in the crop insurance program.

Quoting from the Department of Agriculture *"Risk Management Agency Report to Congress in 2003, "Protecting Farms, Preventing Fraud"*:

"Unlike aerial photographs taken with film, these special digital images capture a light wavelength invisible to the human eye that is displayed as different shades on a photographic image. By monitoring the reflection of light radiated from the ground, infrared images can detect the health of a crop. The healthier the vegetation, the brighter red the image appears in the photograph. But what makes the technology even more valuable is that infrared sensing detects not only variations in plant life, but also the soil condition beneath the plants."

The report goes on to say, "It is our belief that this technology will become a tool of great significance nationwide in monitoring crop conditions and compliance, and in influencing how growers conduct their growing practice."

To analyze the data, it is not necessary for several thousand adjustors to become experts in multi-spectral analysis. The computer processes these overlapping images into a new image called a Normalized Digital Vegetation Index (NDVI). These images can be categorized in to 8 categories depicting the health of the crop – a spectrum from healthy to total loss. For precision agriculture functions, these images can be further broken down into more than 30 bands or categories. These images will give adjustors a verifiable tool to use in calculating crop damage.

Remote sensing imagery is able to cover and analyze a larger ground area than any human effort on the ground could handle, even if allowed far greater amounts of time. These significant savings in time, money and labor costs would lead to greater efficiency in the program and would also allow ground investigators to focus more clearly- and more quickly- on the potential trouble spots identified by the images.

In closing, I would encourage members of the committee and the Department of Agriculture to explore ways to use this exciting new technology. I believe a small investment in a structured pilot project would yield substantial cost savings to the federal government by eliminating significant amounts of waste, fraud and abuse in the crop insurance program.

Thank you for your time and attention to this important topic.